

SCREWORM TRAINING FILM

This film is intended primarily to train new employees of the Screwworm Eradication Program, but until a more general film can be made it will probably be used occasionally for broader purposes.

The film opens with a herd of apparently healthy cattle on a Florida ranch near Orlando, Fla. These Brahma-cross animals look fine, but there is a fly in the cinchrest. Scene switches to a screwworm fly laying eggs around a wound on an animal. The eggs will hatch and the maggots will attack the animal's living flesh, causing death if the wound is not treated. This pest causes about \$10 million annual damage in the Southeast. So the cowboys ride frequently among the herds, as they do in the next scene, and rope animals infested with screwworm. A calf is roped and is found to have an infestation. The wound is treated, the calf is released. As it hobbles away, its gait shows that it has "swollen joints," a streptococcus infection carried and spread by screwworm flies.

In a program of eradicating the screwworm by means of releasing radioactively sterilized flies, the brood flies must be captives, of course. The cage sequence shows brood flies that had their origin as wild Florida flies. Little jars of meat mixture are placed in the cages, and the female flies deposit their white, shingled egg masses on them. The egg masses are removed and hatched overnight.

Larvae or maggots hatched from the eggs, which in nature feed on living flesh, are reared in the laboratory in shallow vats of meat and blood, into which a small amount of preservative is mixed. Scenes show the vats being filled and the larvae being reared in them. When the larvae reach their full development they crawl over the edge of the vat and drop into the sand below, just as they crawl out of a wound in nature and drop to the ground. In both cases they burrow under the surface and go into the pupal stage. The sand is sifted at intervals to separate larvae and pupae, as shown in this sequence. Then the pupae are washed and stored in trays to await sterilization.

When the pupae are $2\frac{1}{2}$ days old, they are placed in 2-liter canisters and exposed to 8,000 roentgens of gamma rays from cobalt-60 for $6\frac{1}{2}$ minutes. During irradiation, Geiger counters are used to measure the level of radiation in the room. After irradiation, the canister is removed from the hoist with bare hands. There is no danger of irradiation from cock or pupae after they are removed from the radiation source. The situation is exactly like that of a person who has been X-rayed -- the rays have passed through him and he is not a source of radiation.

A measure of pupae is placed in each release carton, where the flies will emerge in 2 days. Each measure contains enough pupae to produce 500 live flies for release. The dividers in the boxes are to provide perching space for the flies, which require 12 to 16 hours to stretch their wings and allow their bodies to harden. Once in these cartons -- which have been improved beyond the stage shown here -- the insects are well on their way toward their last man-made journey.

latter on opposite sides from the eye, which is known as
an living line, and is found in the laboratory in which it was
and blood, into which a small amount of preservative is added. These
then the cells being killed and the tissues being covered in form. When
the tissues are then left to develop, they stand open the edge of the
cells and drop into the next hole, just as they did one of a kind
in nature and drop to the ground. In each case they have been the
outside and go into the paper stage. The end is killed at intervals
to separate leaves and paper, as shown in this diagram. Then the paper
are washed and stored in water to avoid oxidation.

When the paper is 1/2 inch thick, they are placed in 2-1/2 inch
containers and exposed to 2,4-D for 24 hours. The 2-1/2 inch
of alcohol. During this time, the paper is placed in water and
of collection in the water. After collection, the water is removed from
the paper and the paper is then placed in water. There is no danger of oxidation from
paper after they are removed from the collection water. The situation is
exactly like that of a person who has been exposed -- the paper has passed
through this and is not a source of oxidation.

A number of papers is placed in each container, where the
liquid will change in 2 days. Each container contains enough paper to
produce 500 lbs. of paper. The liquid in the container is then
removed and the paper is then placed in water. The paper is then
removed from the water and the paper is then placed in water. The paper is then
removed -- which has been removed from the water and the paper is then
removed and will be found to be of the same quality as the

The fly cartons are loaded into an air-conditioned vehicle for their journey to the airport. They are released into a light plane. An ingenious mechanism is used for releasing flies from a plane at 1,000 feet altitude. Where the rate is 300 flies per square mile, a box will be pushed out every 15 seconds, its lid torn open by a hook, and box and flies scattered backward by airstream of the propellers.

Repeating footage on the screwworm fly laying eggs: Are we seeing here a wild female depositing eggs after mating with a sterilized male? If so, her labor is in vain: the eggs will not hatch. To learn how well the program is going, it will be necessary to gather egg masses from infected animals and see whether they hatch. As the program continues, more and more sterile egg masses will be found. Then we will know that the goal is being gradually reached.

Returning to the herd first shown, either different footage or same repeats: This herd has a more hopeful future in store for it. So have all herds, all pets, all wild creatures in the Southeast. The screwworm, that eater of live flesh, is on his way out as the Screwworm Eradication Program gathers momentum, goes into maximum production, and makes screwworm reproduction impossible. When the last egg mass refuses to hatch, when the last maggots die before birth, when the last wild ^{w/}screwworm fly hunts in vain for a nonsterile mate, the job will be done.

—0—

Darrel McCloskey
11/25/57

